CONGRESSMAN SHERWOOD BOEHLERT (R-NY)
SPEECH TO BUSINESS-HIGHER EDUCATION FORUM
June 23, 2005

It's an honor to be with you this morning. I think that education, in general, and science and math education, in particular, is the single most important issue before the nation today.

Nothing else will do as much to determine the kind of society and the kind of economy this nation will have in the future. So I think it's so important that the leaders of our top companies and universities devote themselves to this matter, and that, of course, is what this group is all about.

I could spend a lot of time this morning outlining the problem – the crisis, really – that this nation faces in science and math education. But you all know the facts and figures as well as I do. In fact, the most salient ones are all laid out quite clearly on pages five through eight of your own January report, "A Commitment to America's Future: Responding to the Crisis in Mathematics and Science Education."

I could also cover the waterfront in terms of possible remedies, but I know you're hearing from a wide variety of officials from the Hill and the Administration, so you don't need a survey of the landscape from me.

So I'm going to home in on the aspect of the solution that I know best, which also happens to be a part of the solution that desperately needs your active and vocal support – I'm talking about the education programs of the National Science Foundation (NSF).

Perhaps what I say will overlap somewhat with what you heard this morning from Arden Bement – I kind of hope it does; I think Arden and I are on the same page, but the value of NSF's role in education bears repeating in any event.

I imagine that your chairman, Dr. Wrighton, who is also an active member of the National Science Board, would agree with me on that.

Well, enough with the preliminaries. Let me start with a very clear and stark statement: NSF funding, in general, and NSF education funding, in particular, are in trouble.

That isn't because of any hostility toward NSF. Quite the contrary; rhetorical support for NSF has probably never been higher. Members of Congress across the ideological spectrum and the Administration see fundamental research and education, and therefore, NSF, as guarantors of our future. You don't hear any carping about funny sounding grants or "Golden Fleece" Awards unlike decades ago.

And that rhetorical support can sometimes be transformed into the real thing. For example, when a Member of Congress last week offered an amendment to transfer $126 million from NSF to a very popular program to help local police, the amendment got only about 30 votes. And even the Member offering the amendment allowed as how he wished NSF could be funded at higher levels.

But keeping that $126 million within NSF just preserved the status quo ante, which wasn't so great.

Here are the numbers. The Administration proposed about a 2.4 percent increase for NSF for fiscal year 2006 – and some of that money was designated to pay icebreaking costs in Antarctica that had previously been picked up by the Coast Guard. Not exactly a healthy increase, although better than what most domestic programs received.

The House Appropriations Committee, led by the Subcommittee Chair, Frank Wolf of Virginia, an avid champion of NSF, was able to add some money, giving the agency as a whole

about a 3 percent increase. But the Senate appropriators haven't even provided as much as the President has requested. And even the House number doesn't fund NSF at the level it received in fiscal 2004.

I'll get to education – our focus today – in a moment, but the overall context for NSF is important. Lewis Carroll said that "every story has a moral if only you can find it" and here's the moral of this one: in this budget environment, even a highly regarded agency like NSF is not going to fare too well unless a lot of pressure is brought to bear on the decision makers.

That means that all of you in this room, especially those of you on the corporate side of this Forum, need to do more if you care about the future of basic research in this country.

Now what about education at NSF? Well, sad to say, K-12 and undergraduate education are being treated like proverbial stepchildren. The figures are going in the wrong direction.

The Education Directorate (EHR) at NSF received $944 million in fiscal 2004; this year, that dropped to $841 million; the proposal for next year was down to $737 million.

Money alone won't solve our education problems, but cutting spending won't solve them either. In one positive sign, both the House and the Senate spending bills provide more for NSF education next year than what was requested -- $801 million in the House, $747 million in the Senate – but both of those figures continue the trend of decline.

So the numbers are bad, but it's fair to ask, "Why should we care? In terms of dollars, NSF is a bit player in education, and times are tough all over."

I'll get into specifics, but the basic answer is, "Look at the record." NSF is the one place in the federal government that runs all its education programs through competitive, peer review. It's the place that can focus on excellence as much as equity. It's the place that can best bring together higher education and school districts. It's the place that can best link the latest advances in cognitive psychology and other relevant fields to the practice of teaching.

And it's the place that historically has made a big difference by bringing science content to teachers and students and schools.

If you ask most successful senior teachers about their fondest memories of in-service preparation, to a one they will cite the teacher training institutes that NSF funded in the 1960s. If you ask top teachers today what programs have helped them in the classroom, they will cite a variety of NSF programs geared to education reform and curriculum development.

Indeed, I urge you to do more to meet with teachers. Every year, NSF administers the Presidential Math and Science Teaching Awards. Two teachers from every state are selected as winners through a rigorous process. The awards alternate years between elementary and secondary school teachers.

These awardees are among the most underutilized resources for policymakers.

On the Science Committee, we have a hearing every year with them, but other than us, they get hardly any exposure on Capitol Hill. You ought to talk to them to find out what real teachers need. It's remarkable how little education policymakers tend to talk to teachers and these are the cream of the crop.

But for now, you'll have to listen to me, so let me mention three NSF programs that I think are especially worthy of your attention and support.

First is the Math and Science Partnerships. The Science Committee wrote the legislation that authorized this program, which the President proposed as part of his "No Child Left Behind" initiative. The idea is simple: we need to do more to get our institutions of higher education to work with our local school districts.

Our universities are unrivaled in the world, but often their only involvement with pre-college education is to complain about the results. That's got to change.

So the program awards grants to partnerships between universities and school districts, which may also involve businesses. And, by law, the universities have to commit the resources of their math, science and engineering departments. If education schools or departments want to participate too, that's just icing on the cake.

The program seems to be working, but NSF has not had the money to make new awards for this year, and right now it looks like that will be the case next year, as well.

The Department of Education also has a partnership program, created by Congress. The two programs are complementary. NSF runs a peer reviewed program designed to test out new ideas; the Department can help more school districts implement programs that prove to be successful.

Another program at NSF that merits more support is the Noyce scholarships, named after Robert Noyce, one of the inventors of the semiconductor. Senator Jay Rockefeller and I wrote the legislation creating the program years ago, but it's only been funded – and at low levels – the last few years, since I've been chairman of the Science Committee.

The program addresses one of the crises described in your report: the shortage of qualified math and science teachers. No curriculum, no computer, no gimmick will improve education if we don't have the best teachers in our classrooms. So what the Noyce program does is award scholarships to top math, science and engineering students who agree to teach for two years in return for each year of scholarship aid.

A unique feature of the program is that the grants go to universities, which not only distribute the scholarship money; they have to offer programs to help prepare these students for the classroom.

The federal government runs other incentive programs that are less targeted. There are loan forgiveness programs for teachers run out of the Department of Education, and Frank Wolf and I and others have introduced a bill to create loan forgiveness for students who go into any math, science or engineering field including teaching.

And there are more narrowly targeted programs. For example, the Congress, led by the Science Committee, has enacted scholarships at NASA to be paid back by working for that agency, and we're pushing similar legislation for other federal science and technology agencies.

Incentives like these are important – both for the signal they send about what is valued, and for the specific students they can influence. But we all have to admit that incentive programs alone are not the answer. They would have to be gargantuan to reach beyond the students who already have some interest in pursuing whatever the particular service requirement is.

What we also need are programs that increase the pool of students who would be eligible for, and interested in, scholarships or other incentives.

One program that is designed to do just that is what we call the Tech Talent program, which NSF has given the acronym STEP; I can never remember what that stands for. This is a program that was created in legislation that Senator Lieberman and I introduced, and it's been funded at a low level for the past several years.

The idea of this program is to change the financial incentives for universities. The program provides grants to improve undergraduate science, math and engineering education. As you know, about half the students who enter college interested in majoring in math, science or

engineering, come out four years later in other fields. It seems highly unlikely that none of these students could make the grade.

So what STEP does is provide undergraduate reform grants in return for the recipient schools setting a specific numerical goal for increasing the number of graduating seniors in math, science and engineering. The grant gets continued if the goals are being met.

There are numerous ideas out there for improving K-12 and undergraduate education – P through 16 education, as you call it in your report. At the undergraduate level, NSF is pretty much the only game in town. I hope you're talking to some of the leaders in undergraduate reform, like Jeanne Narum of Project Kaleidoscope, to hear what NSF is doing and what more it could be doing.

I've mentioned the specific programs only as examples of the kinds of things NSF ought to be doing. But to do any of this, it needs to have a strong commitment to education programs, backed by strong support from groups like yours. And it needs the money.

The National Science Board, the governing body for NSF, is embarking on a study that is designed to renew NSF's commitment to education. I met with the chair of the Board's Education Committee a week or so ago and urged her to make sure that the study deals with both K-12 and undergraduate education. Those two areas raise different issues, but they must be discussed simultaneously.

I'm also working with Congressman Vern Ehlers of Michigan, who is a Ph.D. physicist, and with Frank Wolf to pull together an Innovation Summit in Washington this fall. You may have heard something about this. The idea is to bring 50 to 75 top CEOs and academic leaders together to endorse a short, focused agenda for federal research and development and education and workforce policies.

We're working with a Steering Committee that includes the National Association of Manufacturers, AeA (formerly the American Electronics Association), the Business Roundtable and the Council on Competitiveness. So I'm sure many of you are represented through those groups.

We hope to have an Action Paper out this summer that everyone will be able to comment on in preparation for the summit. I'm sure we'll be working with the Forum on that.

So there are many efforts afoot to try to right our course on education. NSF is only one part of the solution, obviously.

You're dealing with many other parts during your conference, including visa policy. I should just say in passing that the Science Committee has led the way in pushing – successfully – to clear out the visa backlog and to put in place a more sensible visa review system. We requested the GAO (Government Accountability Office) study that first documented the backlog and that has since documented the improvement.

As I've said repeatedly, casting too wide a net undermines our security. It makes it hard to focus on those most likely to do our nation harm, and it deprives us of the expertise we need to remain the world leader in science and technology.

But that's the subject of your next session, so I won't say more on that now. So let me close by urging you once again to lend your insight and support to NSF's education portfolio. We have always needed foreign students, but we can't become utterly dependent upon them, and that's the way we're heading.

We would be wise to heed words written by H.G. Wells a century ago: "Civilization becomes more and more a race between education and catastrophe."

Thank you.